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REMARKS

Claims 1-11, 13-15, and 17-23 are pending in this application.

Claims 1-11, 13-15, and 17-23 are rejected.

The final office action dated March 26, 2004 indicates that claims 4, 6, 11 and 14 are rejected under 35 USC §102 (b) as being anticipated by Wagensonner et al. U.S. Patent No. 4,812,903. The '102 rejection has been rendered moot by the cancellation of claims 4, 6 and 11, and the amendment to claim 14.

The final office action also indicates that claims 1-3, 5, 7-10, 13 and 18-20 are rejected under 35 USC §103 as being unpatentable over Wagensonner et al. in view of Hirose U.S. Patent No. 5,557,429; claims 15 and 21 are rejected under 35 USC §103 as being unpatentable over Wagensonner et al. in view of Gindele; and clams 17, 22 and 23 are rejected under 35 USC §103 as being unpatentable over Wagensonner et al. in view of Gindele and Hirose. The '103 rejection of claims 13, 15 and 17 has been rendered moot by the cancellation of these claims. The remaining '103 rejections are respectfully traversed.

Claim 1 recites a method of processing a pixel of a digital image. The method includes applying a tone mapping function to a first color channel of the pixel, the first color channel most closely matching relative luminance response of the human visual system; computing scale factors for other channels of the pixel; and applying the scale factors to the other color channels of the pixel. The scale factors are computed according to fixed offset values[1] and a change in value of

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[1] The unentered amendment filed May 26, 2004 used "noise balancing terms." The advisory action indicated that noise balancing terms was vague and different than "fixed values used to offset the effect of noise in calculating the scale factors.

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the first color channel. The fixed values offset the effect of noise in calculating the scale factors.

Wagensonner et al. do not teach or suggest the use of fixed values for offsetting the effect of noise in calculating the scale factors.

Hirose discloses a noise generating unit 3 and a noise superposing unit 4. Using Formula 3 (col. 8, line 30) the noise superposing unit 4 adds noise to each component (L, a and b) of a signal in Lab color space. The noise is added to overcome insufficient tone steps in copied images. Hirose does not teach or suggest the use of fixed values for offsetting the effect of noise in calculating the scale factors. Therefore, claim 1 and its dependent claims 2-3, 5 and 7-10 should be allowable over Wagonsonner et al. and Hirose.

Claim 18 recites apparatus for processing pixels of a digital image. The apparatus comprises a processor for applying a tone mapping function to a first color channel of the pixels, computing scale factors for other channels of the pixels, and applying the scale factors to the other color channels of the pixels. The scale factors are computed according to noise balancing terms and changes in values of the first color channel. The first color channel most closely matches relative luminance response of the human visual system.

Wagensonner et al. do not teach or suggest the use of noise balancing terms.

Hirose provides no reason, motivation or incentive to modify Wagensonner et al.'s scale factors. Hirose's motivation for adding noise is not relevant to the problems associated with scale factors. The noise is added to overcome insufficient tone steps in copied images.

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The advisory action states that motivation for adding noise to Wagensonner et al's scale factors can be found on pages 5 and 6 of the final office action, which states "a noise quantity of a small positive number which is not perceived visually is accordingly added to each color channel during color correction and transformation processes to cancel the visual adverse effects by image noise, tone steps, and the like."   However, Hirose does not make a sweeping generalization about all images. Hirose is limited to images having insufficient tone steps in copied images. None of the documents made of record identify such a problem in Wagensonner et al. Therefore, no motivation exists to modify Wagensonner et al. in the manner suggested by the office action.

Therefore, claim 18 and its dependent claims 14, 19 and 20 should be allowable over the combination of Wagensonner et al. and Hirose.

Claim 21 and its dependent claims 22-23 should be allowed over the combination of Wagensonner in view of Gindele et al. U.S. Patent No. 6,594,388. The final office action acknowledges that Wagensonner et al. does not teach or suggest the use of noise balancing terms. Gindele et al. do not teach or suggest the use of noise balancing terms.

Claims 24-29 have been added to the application. Claims 26-29 depend from base claims 18 and 21. Claims 24-25 recite that the noise balancing terms are the same for all pixels in the image. This feature is not taught or suggested by the documents made of record. For example, Hirose disclose the superposition of spatially varying noise.

An objection to claim 11 has been rendered moot by the cancellation of claim 11. Nevertheless, the examiner is thanked for pointing out a typographical

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error in claim 11.

The examiner is respectfully requested to issue a notice of allowability. If any issues remain, the examiner is invited to contact the undersigned to discuss those remaining issues.